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SEQUENCE LISTING

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His Leu Arg Phe Leu Glu Glu Leu Arg Leu Ser Gly Asn His Leu Ser						
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His Ile Pro Gly Gln Ala Phe Ser Gly Leu Tyr Ser Leu Lys Ile Leu						
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ccc cct ggg ctg gag acc tat ggc ttc ccc tca gtg acc ctc atc tcc      2599
Pro Pro Gly Leu Glu Thr Tyr Gly Phe Pro Ser Val Thr Leu Ile Ser
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tgt cag cag cca ggg gcc ccc agg ctg gag ggc agc cat tgt gta gag      2647
Cys Gln Gln Pro Gly Ala Pro Arg Leu Glu Gly Ser His Cys Val Glu
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cca gag ggg aac cac ttt ggg aac ccc caa ccc tcc atg gat gga gaa      2695
Pro Glu Gly Asn His Phe Gly Asn Pro Gln Pro Ser Met Asp Gly Glu
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ctg ctg ctg agg gca gag gga tct acg cca gca ggt gga ggc ttg tca      2743
Leu Leu Leu Arg Ala Glu Gly Ser Thr Pro Ala Gly Gly Gly Leu Ser
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gagaaaggcc tggaaggtga tttcccgtgt gactcatgga taggatacaa aatgtgttcc      3211

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Lys Ile Leu Met Leu Gln Asn Asn Gln Leu Gly Gly Ile Pro Ala Glu
 65 70 75 80

Ala Leu Trp Glu Leu Pro Ser Leu Gln Ser Leu Arg Leu Asp Ala Asn
 85 90 95

Leu Ile Ser Leu Val Pro Glu Arg Ser Phe Glu Gly Leu Ser Ser Leu
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Arg His Leu Trp Leu Asp Asp Asn Ala Leu Thr Glu Ile Pro Val Arg
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Ala Leu Asn Asn Leu Pro Ala Leu Gln Ala Met Thr Leu Ala Leu Asn
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Arg Ile Ser His Ile Pro Asp Tyr Ala Phe Gln Asn Leu Thr Ser Leu
 145 150 155 160

Val Val Leu His Leu His Asn Asn Arg Ile Gln His Leu Gly Thr His
 165 170 175

Ser Phe Glu Gly Leu His Asn Leu Glu Thr Leu Asp Leu Asn Tyr Asn
 180 185 190

Lys Leu Gln Glu Phe Pro Val Ala Ile Arg Thr Leu Gly Arg Leu Gln
 195 200 205

Glu Leu Gly Phe His Asn Asn Asn Ile Lys Ala Ile Pro Glu Lys Ala
 210 215 220

Phe Met Gly Asn Pro Leu Leu Gln Thr Ile His Phe Tyr Asp Asn Pro
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Ile Gln Phe Val Gly Arg Ser Ala Phe Gln Tyr Leu Pro Lys Leu His
 245 250 255

Thr Leu Ser Leu Asn Gly Ala Met Asp Ile Gln Glu Phe Pro Asp Leu

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Cys Gln Lys Leu Glu Glu Ile Gly Leu Gln His Asn Arg Ile Trp Glu 325 330 335		
Ile Gly Ala Asp Thr Phe Ser Gln Leu Ser Ser Leu Gln Ala Leu Asp 340 345 350		
Leu Ser Trp Asn Ala Ile Arg Ser Ile His Pro Glu Ala Phe Ser Thr 355 360 365		
Leu His Ser Leu Val Lys Leu Asp Leu Thr Asp Asn Gln Leu Thr Thr 370 375 380		
Leu Pro Leu Ala Gly Leu Gly Gly Leu Met His Leu Lys Leu Lys Gly 385 390 395 400		
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Arg Ile Leu Glu Val Pro Tyr Ala Tyr Gln Cys Cys Pro Tyr Gly Met 420 425 430		
Cys Ala Ser Phe Phe Lys Ala Ser Gly Gln Trp Glu Ala Glu Asp Leu 435 440 445		
His Leu Asp Asp Glu Glu Ser Ser Lys Arg Pro Leu Gly Leu Leu Ala 450 455 460		
Arg Gln Ala Glu Asn His Tyr Asp Gln Asp Leu Asp Glu Leu Gln Leu 465 470 475 480		
Glu Met Glu Asp Ser Lys Pro His Pro Ser Val Gln Cys Ser Pro Thr 485 490 495		

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Val Lys Phe Val Val Gly Ala Ile Ala Gly Ala Asn Thr Leu Thr Gly
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Ile Ser Cys Gly Leu Leu Ala Ser Val Asp Ala Leu Thr Phe Gly Gln
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Phe Ser Glu Tyr Gly Ala Arg Trp Glu Thr Gly Leu Gly Cys Arg Ala
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Ser Phe Cys Phe Leu Val Val Ala Gly Ala Tyr Ile Lys Leu Tyr Cys
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Arg His Val Ala Trp Leu Ile Phe Ala Asp Gly Leu Leu Tyr Cys Pro

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Cys Leu Asn Pro Leu Leu Tyr Leu Leu Phe Asn Pro His Phe Arg Asp 770 775 780		
Asp Leu Arg Arg Leu Arg Pro Arg Ala Gly Asp Ser Gly Pro Leu Ala 785 790 795 800		
Tyr Ala Ala Ala Gly Glu Leu Glu Lys Ser Ser Cys Asp Ser Thr Gln 805 810 815		
Ala Leu Val Ala Phe Ser Asp Val Asp Leu Ile Leu Glu Ala Ser Glu 820 825 830		
Ala Gly Arg Pro Pro Gly Leu Glu Thr Tyr Gly Phe Pro Ser Val Thr 835 840 845		
Leu Ile Ser Cys Gln Gln Pro Gly Ala Pro Arg Leu Glu Gly Ser His 850 855 860		
Cys Val Glu Pro Glu Gly Asn His Phe Gly Asn Pro Gln Pro Ser Met 865 870 875 880		
Asp Gly Glu Leu Leu Leu Arg Ala Glu Gly Ser Thr Pro Ala Gly Gly 885 890 895		
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His Leu Ser His Ile Pro Gly Gln Ala Phe Ser Gly Leu Tyr Ser Leu
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Lys Ile Leu Met Leu Gln Asn Asn Gln Leu Gly Gly Ile Pro Ala Glu
 50 55 60

Ala Leu Trp Glu Leu Pro Ser Leu Gln Ser Leu Arg Leu Asp Ala Asn
 65 70 75

Leu Ile Ser Leu Val Pro Glu Arg Ser Phe Glu Gly Leu Ser Ser Leu
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Arg His Leu Trp Leu Asp Asp Asn Ala Leu Thr Glu Ile Pro Val Arg
 95 100 105

Ala Leu Asn Asn Leu Pro Ala Leu Gln Ala Met Thr Leu Ala Leu Asn
 110 115 120 125

Arg Ile Ser His Ile Pro Asp Tyr Ala Phe Gln Asn Leu Thr Ser Leu
 130 135 140

Val Val Leu His Leu His Asn Asn Arg Ile Gln His Leu Gly Thr His
 145 150 155

Ser Phe Glu Gly Leu His Asn Leu Glu Thr Leu Asp Leu Asn Tyr Asn
 160 165 170

Lys Leu Gln Glu Phe Pro Val Ala Ile Arg Thr Leu Gly Arg Leu Gln
 175 180 185

Glu Leu Gly Phe His Asn Asn Asn Ile Lys Ala Ile Pro Glu Lys Ala

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190	195	200	205
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Ile Gln Phe Val Gly Arg Ser Ala Phe Gln Tyr Leu Pro Lys Leu His	225	230	235
Thr Leu Ser Leu Asn Gly Ala Met Asp Ile Gln Glu Phe Pro Asp Leu	240	245	250
Lys Gly Thr Thr Ser Leu Glu Ile Leu Thr Leu Thr Arg Ala Gly Ile	255	260	265
Arg Leu Leu Pro Ser Gly Met Cys Gln Gln Leu Pro Arg Leu Arg Val	270	275	280
Leu Glu Leu Ser His Asn Gln Ile Glu Glu Leu Pro Ser Leu His Arg	290	295	300
Cys Gln Lys Leu Glu Glu Ile Gly Leu Gln His Asn Arg Ile Trp Glu	305	310	315
Ile Gly Ala Asp Thr Phe Ser Gln Leu Ser Ser Leu Gln Ala Leu Asp	320	325	330
Leu Ser Trp Asn Ala Ile Arg Ser Ile His Pro Glu Ala Phe Ser Thr	335	340	345
Leu His Ser Leu Val Lys Leu Asp Leu Thr Asp Asn Gln Leu Thr Thr	350	355	360
Leu Pro Leu Ala Gly Leu Gly Gly Leu Met His Leu Lys Leu Lys Gly	370	375	380
Asn Leu Ala Leu Ser Gln Ala Phe Ser Lys Asp Ser Phe Pro Lys Leu	385	390	395
Arg Ile Leu Glu Val Pro Tyr Ala Tyr Gln Cys Cys Pro Tyr Gly Met	400	405	410
Cys Ala Ser Phe Phe Lys Ala Ser Gly Gln Trp Glu Ala Glu Asp Leu	415	420	425

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His Leu Asp Asp Glu Glu Ser Ser Lys Arg Pro Leu Gly Leu Leu Ala
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Arg Gln Ala Glu Asn His Tyr Asp Gln Asp Leu Asp Glu Leu Gln Leu
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Glu Met Glu Asp Ser Lys Pro His Pro Ser Val Gln Cys Ser Pro Thr
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Pro Gly Pro Phe Lys Pro Cys Glu Tyr Leu Phe Glu Ser Trp Gly Ile
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Cys Leu Ala Leu Ala Gly Leu Ala Ala Ala Leu Pro Leu Ala Ser Val
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Gly Glu Tyr Gly Ala Ser Pro Leu Cys Leu Pro Tyr Ala Pro Pro Glu
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Gly Gln Pro Ala Ala Leu Gly Phe Thr Val Ala Leu Val Met Met Asn

- 13 -

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Ser Phe Cys Phe Leu Val Val Ala Gly Ala Tyr Ile Lys Leu Tyr Cys		
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Asp Leu Pro Arg Gly Asp Phe Glu Ala Val Trp Asp Cys Ala Met Val		
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Arg His Val Ala Trp Leu Ile Phe Ala Asp Gly Leu Leu Tyr Cys Pro		
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Val Ala Phe Leu Ser Phe Ala Ser Met Leu Gly Leu Phe Pro Val Thr		
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Pro Glu Ala Val Lys Ser Val Leu Leu Val Val Leu Pro Leu Pro Ala		
	735	740 745
Cys Leu Asn Pro Leu Leu Tyr Leu Leu Phe Asn Pro His Phe Arg Asp		
	750	755 760 765
Asp Leu Arg Arg Leu Arg Pro Arg Ala Gly Asp Ser Gly Pro Leu Ala		
	770	775 780
Tyr Ala Ala Ala Gly Glu Leu Glu Lys Ser Ser Cys Asp Ser Thr Gln		
	785	790 795
Ala Leu Val Ala Phe Ser Asp Val Asp Leu Ile Leu Glu Ala Ser Glu		
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Ala Gly Arg Pro Pro Gly Leu Glu Thr Tyr Gly Phe Pro Ser Val Thr		
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Leu Ile Ser Cys Gln Gln Pro Gly Ala Pro Arg Leu Glu Gly Ser His		
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Cys Val Glu Pro Glu Gly Asn His Phe Gly Asn Pro Gln Pro Ser Met		
	850	855 860
Asp Gly Glu Leu Leu Leu Arg Ala Glu Gly Ser Thr Pro Ala Gly Gly		
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Asp Leu Ser Met Asn Asn Leu Thr Glu Leu Gln Pro Gly Leu Phe His
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His Leu Arg Phe Leu Glu Glu Leu Arg Leu Ser Gly Asn His Leu Ser
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His Ile Pro Gly Gln Ala Phe Ser Gly Leu Tyr Ser Leu Lys Ile Leu
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Met Leu Gln Asn Asn Gln Leu Gly Gly Ile Pro Ala Glu Ala Leu Trp
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Trp Leu Asp Asp Asn Ala Leu Thr Glu Ile Pro Val Arg Ala Leu Asn
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aac ctc cct gcc ctg cag gcc atg acc ctg gcc ctc aac cgc atc agc 487
Asn Leu Pro Ala Leu Gln Ala Met Thr Leu Ala Leu Asn Arg Ile Ser
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His Ile Pro Asp Tyr Ala Phe Gln Asn Leu Thr Ser Leu Val Val Leu

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Ser Phe Glu Gly Leu His Asn Leu Glu Thr Leu Asp Leu Asn Tyr Asn
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Lys Leu Gln Glu Phe Pro Val Ala Ile Arg Thr Leu Gly Arg Leu Gln
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Glu Leu Gly Phe His Asn Asn Asn Ile Lys Ala Ile Pro Glu Lys Ala
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Phe Met Gly Asn Pro Leu Leu Gln Thr Ile His Leu Tyr Asp Asn Pro
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Ser Phe Glu Gly Leu His Asn Leu Glu Thr Leu Asp Leu Asn Tyr Asn
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